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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/583,701

06/20/2006

Jeong-Bong Yoon

1455-061830

3249

28289 7590 09/24/2008

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EXAMINER

YEE, DEBORAH

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

09/24/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/583,701	Applicant(s) YOON ET AL.	
	Examiner Deborah Yee	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 58-120 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 58-120 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>1/14/08;10/10/07</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 58 to 120 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 2003/031670 ("Murakami et al.").

3. Murakami et al. in claims 1 to 18 on pages 37 to 40 disclose cold rolled steel sheet having a composition with constituents whose wt% ranges overlap those recited by the claims; such overlap in wt% ranges establishes a prima facie case of obviousness because it would be obvious for one skilled in the art to select the claimed alloy wt% ranges over the broader disclosure of the prior art since the prior art teaches similar properties of excellent formability.

4. More specifically, Murakami et al. in table 11 on page 35 discloses steels P and Q that meet the claimed composition except for higher C content. It would, however, be obvious for one skilled in the art to lower C content since prior art teaches a broad C range of 0.0005 to 0.04%. In addition when calculated, prior art steels P and Q meet the claimed equations recited by one or more of the claims.

5. Also prior art on pages 22 and 37 to 40 teaches a steel sheet produced in substantially the same manner as claimed by Applicants comprising the steps of hot rolling at 1150°C (within claimed temperature of 1,100°C or more), cooling at 30°C/sec

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or less (overlaps claimed cooling rate of 200°C/min equivalent to 3.3°C/sec or more), coiling at 650°C or lower (overlaps claimed range of 700°C or less), cold rolling with a reduction of 92%, and continuous annealing at 680°C for one minutes (within inventive range of 500-900°C for about 10 seconds or more as shown on pages 17 to 18 of Applicants' specification).

6. Murakami et al. on page 13, lines 20 to 33 teach Mo as alloying element in an amount of 0.10% or less which overlap and therefore teaches a portion of 0.01 to 0.2% Mo recited by one or more of the dependent claims.

7. Similar to present invention, Murakami et al. teaches steel containing MnS and CuS. Although prior art does not teach MnS and/or CuS having an average size of $\leq 0.2 \mu\text{m}$ or in the amount of 2×10^8 precipitates or more per unit area (mm^2) as recited by one or more the claims, such properties would be expected since composition and process of making are closely met, and in absence of proof to the contrary.

8. Claims 58, 59, 61-67, 90 and 92 to 98 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,078,809 ("Kinoshita et al.") which was cited by Applicants in IDS dated January 14, 2008 alone or in view of US patent 6,706,419 ("Yoshinaga et al.").

9. Kinoshita et al. in claims 1 to 8 of columns 17-18 discloses cold rolled steel sheet having a composition with constituents whose wt% ranges overlap those recited by the claims; such overlap in wt% ranges establishes a prima facie case of obviousness because it would be obvious for one skilled in the art to select the claimed alloy wt% ranges over the broader disclosure of the prior art since the prior art teaches the same

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utility of using sheet to make automobile components and similar properties of good bake hardenability and press formability.

10. More specifically, prior art in table 4 discloses steel examples in table 4 of column 14 that meet the claimed equation except for slightly lower C and also when calculated, meet the claimed equations. With regard to C content, it would be obvious for one skilled in the art to increase C since a broad C range of 0.001 to 0.003% is taught. In addition, comparative steel 20 in table 7 of column 16 meets the claimed composition and equations.

11. Also similar to present invention, prior art in claims 1 to 8 and tables 3 and 6 teaches steel processed in substantially the same manner as claimed by Applicants comprising the steps of hot rolling at a finishing temperature of Ar_3 to $Ar_3 + 100^{\circ}C$ (within claimed temperature of Ar_3 or more), rapid cooling (suggest claimed rapid cooling rate of $200^{\circ}C/min$ equivalent to $3.3^{\circ}C/sec$ or more), coiling at $750^{\circ}C$ or lower (overlaps claimed range of $700^{\circ}C$ or less), cold rolling with a reduction of 75 to 95%, and continuous annealing at recrystallization temperature to less than $800^{\circ}C$ for $\frac{1}{2}$ minute to one minute (within inventive range of $500-900^{\circ}C$ for about 10 seconds or more, shown on pages 17 to 18 of Applicant's specification).

12. Kinoshita et al. on lines 48 to 55 in column 7 teaches steel containing MnS to suppress hot brittleness. Although prior art does not teach MnS having an average size of $\leq 0.2 \mu m$ or in the amount of 2×10^8 precipitates or more per unit area (mm^2) as recited by one or more the claims, such properties would be expected since

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composition and process of making is closely met, and in absence of proof to the contrary.

13. Even though Kinoshita et al. does not teach adding small amounts Cr or Mo as recited by one or more of the dependent claims, such would be obvious additives. Note that it is well known in the art to add small amounts of Mo or Cr to analogous steel alloys to improve bake hardenability as evident by Yoshinaga et al. on lines 26 to 32 in column 7. Since such property is desired by Kinoshita et al., then it would be well within the skill of the art to incorporate Mo or Cr in view of secondary teaching to produce no more than the known and expected result from such an addition.

Claim Objections

14. Claim 99 is objected to because of the following informalities: There is a typo-error wherein "CnS" should be ---CuS---. Appropriate correction is required.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Yee whose telephone number is 571-272-1253. The examiner can normally be reached on monday-friday 6:00 am-2:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Deborah Yee/
Primary Examiner
Art Unit 1793

/DY/